

# (12) UK Patent Application (19) GB (11) 2 300 764 (13) A

(43) Date of A Publication 13.11.1996

(21) Application No 9509581.6

(22) Date of Filing 11.05.1995

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(51) INT CL<sup>6</sup>  
H02G 3/08, H01R 9/00 // H02G 3/16 3/18

(52) UK CL (Edition O)  
H2E EBX EDBA EEPC E278  
U1S S2215

(56) Documents Cited  
GB 0349497 A US 5266049 A US 4723919 A

(58) Field of Search  
UK CL (Edition N) H2E EBX EDCW EFAK  
INT CL<sup>6</sup> H01R, H02G

## (54) A junction box for electrical communication

(57) A junction box (1, figure 1) for electrical communication is composed of an upper case 2 and a lower case (3, figure 2). Wires 4 enter the box through press-outs (33) on the lower case (3) and are guided by an H-shaped post (34), the stripped end of each wire being crimped on a groove (272, figure 9) of an L-shaped terminal 27 fixed on a locating post 24 in the upper case 2 by a screw 26 through a fixing ring 271 and located by a partition groove 2411. A wire connecting block 22 is inserted into a hole 222 in the upper case 2, to fix at least one pair of wires 4, one stripped end of each wire being connected to L-shaped terminal 27 fixed on a locating post 24, the other end of each wire 4 being fixed on a metal partition groove 223 in the hole 222 of the upper case 2 so that a signal can be transmitted from the wires to a telephone connector which is inserted into the junction box (1) by an insertion aperture (21) to contact the metal partition grooves 223. The connector insertion aperture is shielded by a spring biased cover (211) slidable along grooves (212, figure 5).

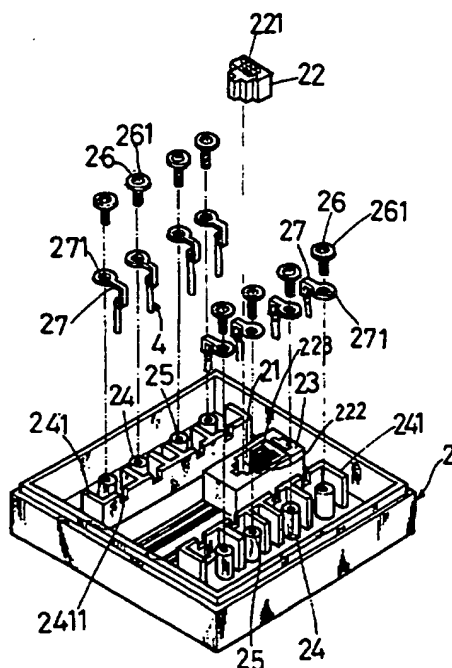


FIG. 8

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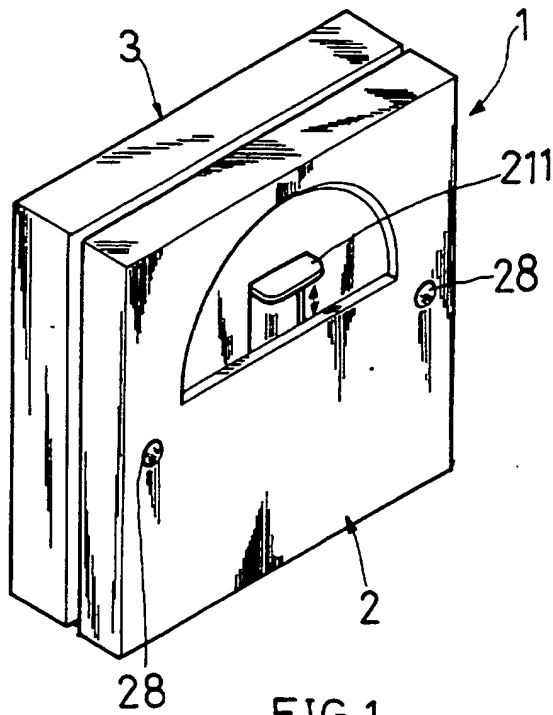


FIG. 1

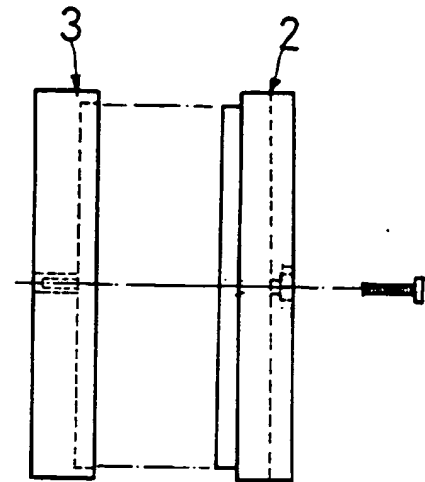
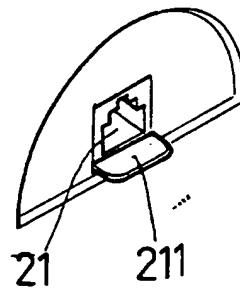


FIG. 3

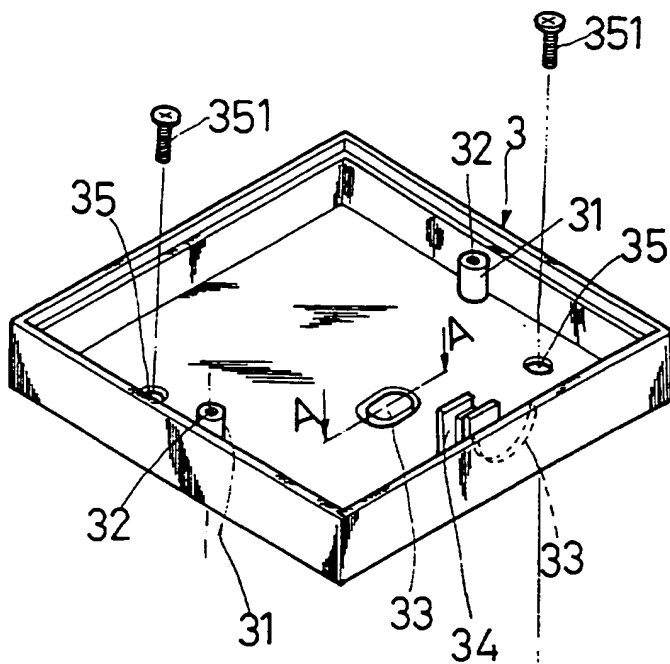
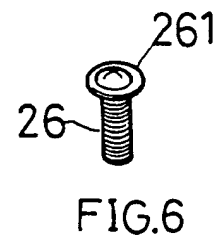
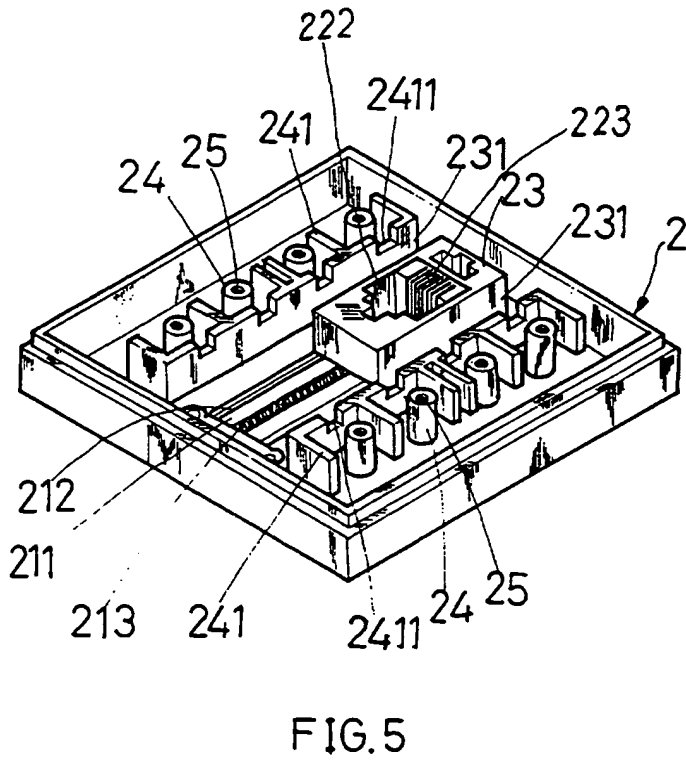
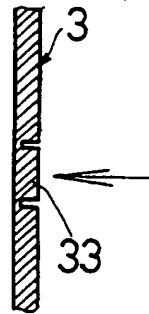
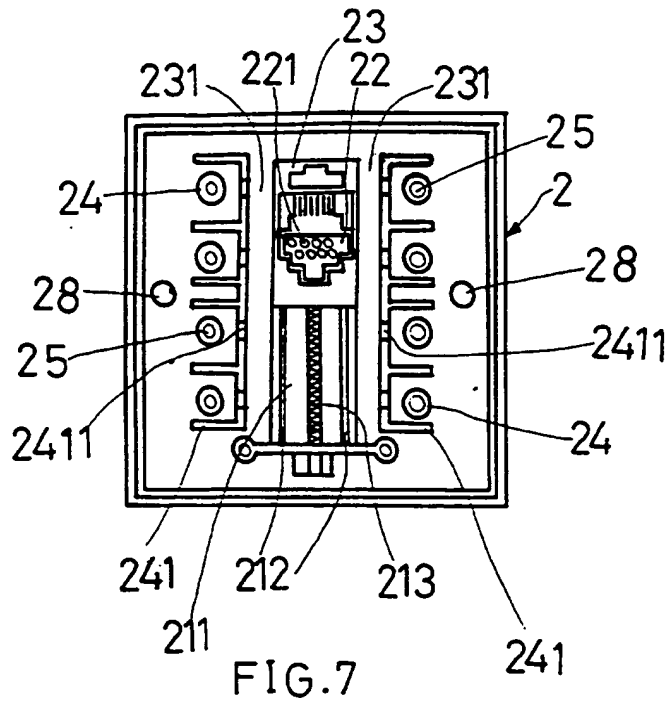


FIG. 2

2/3



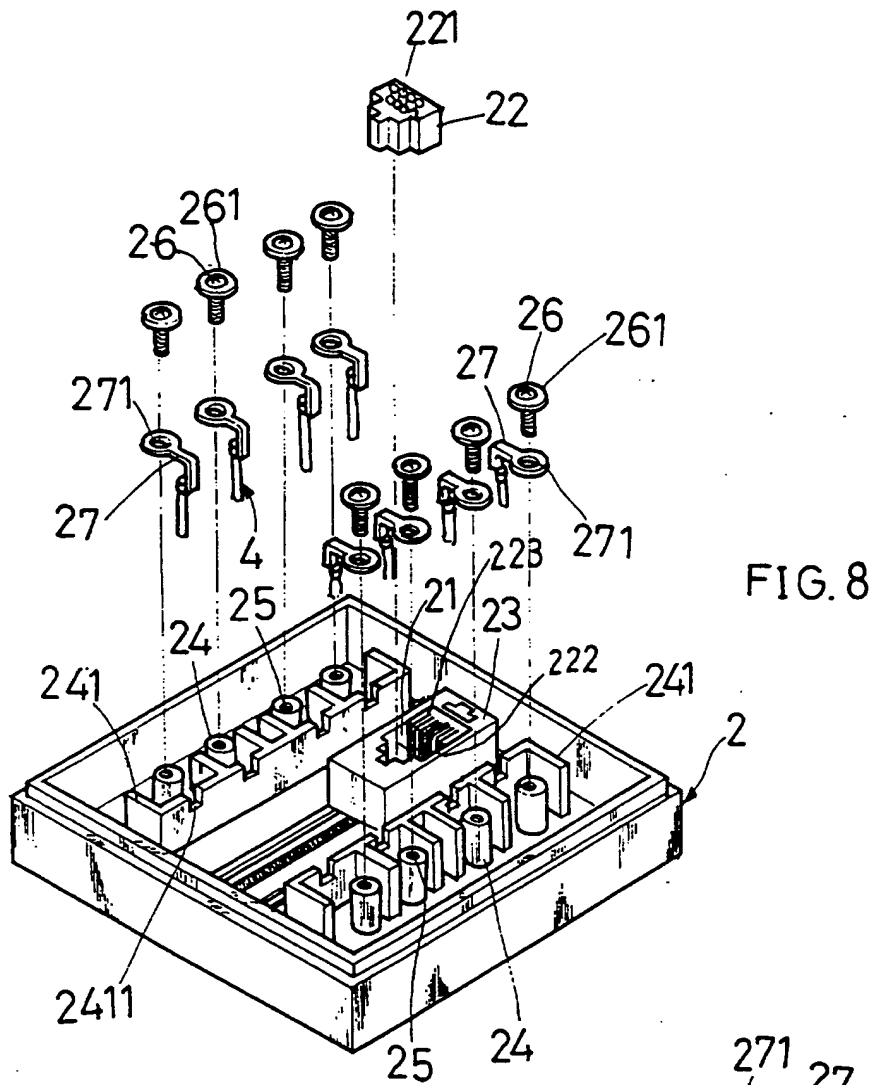


FIG. 8

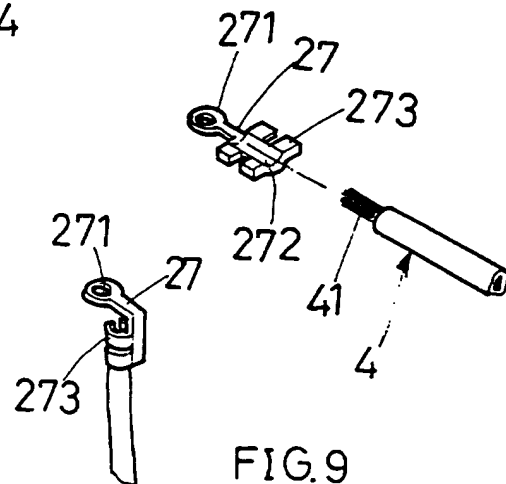


FIG. 9

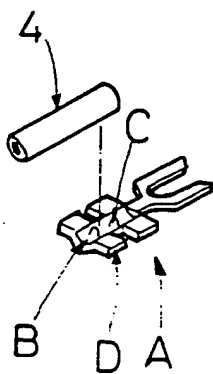


FIG. 10.  
(PRIOR ART)

A JUNCTION BOX FOR ELECTRICAL COMMUNICATION

This invention relates to a junction box for electrical communication, composed of an upper case (2), a lower case, a guide wire connecting block and a plurality of L-shape terminal, the outer wires can be drawn into the junction box from a through hole in lower case, the stripped end of each outer wire being put on a fixing groove of the L-shape terminal and covered by two side plates to fix the stripped end, the connected L-shape terminal and outer wire being fixed on a locating post in the upper case. The guide wire connecting block can be inserted into a fitting hole in the upper case, it can fix at least one pair of guide wire, the one stripped end of each guide wire being connected with a L-shape terminal and fixed on a locating post, the other end of each guide wire being fixed on a metal partition groove in the fitting hole of the upper case so as to make the signal can be transmitted from the outer wires to the telephone connector which is inserted into the junction box from an inserting aperture to contact the metal partition grooves.

The conventional junction box for electrical communication is used for connecting at least one or more telephone wires, but the connecting method

for terminals and guide wires in the conventional junction box having some deficiencies which is shown in Fig.10, the terminal (A) having a fitting groove (B) on which have a plurality of shape points (C), the guide wire being laid on the fitting groove (B), therefore the shape points (C) can pierce into the guide wire, then wrapping two side plates (B) of the terminal (A) to cover and fix the guide wire. But such kind of connecting method having worse electric conduction, furthermore the guide wire being easy to loosen from the terminal.

It is therefore a main aim of this invention to provide a junction box for electrical communication. The invention provides a junction box for electrical communication comprising:

An upper case, the surface of said upper case having an inserting aperture on which have a movable protective cover, the back of said movable protective cover having a rectangular block in which have a fitting hole, inside said fitting hole having a plurality of metal partition grooves, two sides of said rectangular block having respectively a passage for arranging outer wire, the other side of each said passage having a plurality of divided plates which forms a plurality of spaces, in each said space having a lo-

cating post in which have a screw hole;

A guide wire connecting block in which have a plurality of locating holes for fixing at least one pair of guide wires;

5        A lower case, said lower case can be connected with said upper case, the inner surface and side wall of said lower case having respectively a push plate, each push plate can be pressed to break up to form a through hole, the inner  
10 surface of said lower case having a H-shape post;

A plurality of L-shape terminals, each said L-shape terminal having a pair of side plates, a fixing ring and a fixing plate;

In which a pair of said outer wires can be  
15 drawn through said through hole of said lower case, the stripped end of each said outer wire being put on said fixing groove of said L-shape terminal and covered by said two side plates so as to fix the stripped end, the connected L-shape  
20 terminal and outer wire being fixed on a said locating post by means of screwing a screw bolt through said fixing ring and into said screw hole of said locating post, said guide wire connecting block fixing at least one pair of guide wires, the  
25 one stripped end of each guide wire being connected with a said L-shape terminal and fixed on a said locating post, the other end of each guide

wire being fixed on a said metal partition groove so as to make the signal can be transmitted from said outer wires to the telephone connector which is inserted into said inserting aperture of said upper case to contact said metal partition grooves.

In the drawings, which illustrate the preferred embodiments and modes of operation of the invention, and in which like reference characters designate the same or similar parts throughout the several views:

Fig.1 is a perspective view showing a junction box for electrical communication of the present invention;

Fig.2 is a perspective view showing a lower case of this invention;

Fig.3 is a plan view showing the assembly process of this upper case and the lower case of this invention;

Fig.4 is a sectional view on line A-A in Fig.2;

Fig.5 is a perspective view showing an upper case of this invention;

Fig.6 is a perspective view showing a screw bolt of this invention;

Fig.7 is a plan view of the upper case of this invention;



Fig.8 is an exploded view of the upper case of this invention;

Fig.9 is a perspective view showing the connection status of a L-shape terminal and a guide wire of this invention; and

Fig.10 is a perspective view showing the connection status of the conventional terminal and a guide wire.

An embodiment of this invention will now be described with reference to the above mentioned accompanying drawings:

Referring to Fig.1 to Fig.7, the present invention, a junction box for electrical communication, is composed of an upper case (2), a lower case (3), a guide wire connecting block (22) and a plurality of L-shape terminals (27), wherein the upper case (2) having an inserting aperture (21) on which have a movable protective cover (211), the movable protective cover (211) being installed on a pair of guide grooves (212), the end of the movable protective cover being connected with a tension spring (213), therefore it can be pulled to open or close the inserting aperture (21). The back of the movable protective cover (211) having a rectangular block (23) in which have a fitting hole (222), inside the fitting hole (222) having a plurality of metal partition

grooves (223), a guide wire connecting block (22) can be inserted into the fitting hole (222), two sides of the rectangular block (23) having respectively a passage (231) for arranging outer wire, the other side of each passage (231) having a plurality of divided plates (241), which forms a plurality of spaces, within each space having a locating post (24) in which have a screw hole (25) formed therein, furthermore the side of each divided plate (241), which faced to the passage (231) having an aperture (2411) so as to make a L-shape terminal (27) can be located on the aperture (2411). The upper case (2) have two fixing holes (28) and the lower case (3) have two relative fixing posts (31) in which have respectively a tap hole (32), the upper case (2) can be connected with the lower case (3) by inserting round head screws (29) through the fixing holes (28) and screwing into the tap holes (32) of the lower case (3). The inner surface and side wall of the lower case (3) having respectively a push plate (33), each of the push plates (33) can be pressed to break up to form a through hole (331), furthermore the inner surface of the lower case (3) having a H-shape post (34). A pair of outer wires are drawn into the junction box (1) from the through holes (331) of the lower case (3) and lo-

cated on the H-shape post (34), the end of covered insulator of each outer wire being stripped, the stripped end (41) of each outer wire being put on a fixing groove (272) of the L-shape terminal (27) and covered by two plates (273) of the L-shape terminal (27) so as to fix the stripped end, such as shown in Fig.8 and Fig.9, the connected L-shape terminal (27) and outer wire being fixed on a locating post (24) by means of screwing a screw bolt (26) together with a washer (261) through a fixing ring (271) of the L-shape terminal (27) and into the screw hole (25) of the locating post (24). The guide wire connecting block (22) can fix at least one pair of guide wires (4), the one stripped end of each guide wire (4) being connected with a L-shape terminal (27) and fixed on a locating post (24), the other end of each guide wire being fixed on a metal partition groove (223), therefore a signal can be transmitted from the outer wires to the telephone connector which is inserted into the inserting aperture (21) of the upper case (2) to contact the metal partition grooves (223). In addition, the lower case (3) having a plurality of holes (35) formed at its bottom, therefore the lower case (3) can be installed on the wall by means of screwing fixing screw bolts (351) through the holes (35) and into the wall.

## CLAIMS:

1. A junction box for electrical communication comprising:

An upper case, the surface of said upper case  
5 having an inserting aperture on which have a movable protective cover, the back of said movable protective cover having a rectangular block in which have a fitting hole, inside said fitting hole having a plurality of metal partition  
10 grooves, two sides of said rectangular block having respectively a passage for arranging outer wire, the other side of each said passage having a plurality of divided plates which forms a plurality of spaces, in each said space having a locating post in which have a screw hole;  
15

A guide wire connecting block in which have a plurality of locating holes for fixing at least of one pair of guide wires;

A lower case, said lower case can be connected with said upper case, the inner surface and side wall of said lower case having respectively a push plate, each push plate can be pressed to break up to form a through hole, the inner surface of said lower case having a H-shape  
20 post;  
25

A plurality of L-shape terminals, each said

L-shape terminal having a pair of side plates, a fixing ring and a fixing groove;

The junction box for electrical communication characterized in that: a pair of said outer  
5 wires can be drawn through said through hole of said lower case, the stripped end of each said outer wire being put on said fixing groove of said L-shape terminal and covered by said two sides plates so as to fix the stripped end, the  
10 connected L-shape terminal and outer wire being fixed on a said locating post by means of screwing a screw bolt through said fixing ring of said L-shape terminal and into said screw hole of said locating post, said guide wire connecting block  
15 fixing at least one pair of guide wires, the one stripped end of each guide wire being connected with a said L-shape terminal and fixed on a said locating post, the other end of each guide wire being fixed on a said metal partition groove so  
20 as to make the signal can be transmitted from said outer wires to the telephone connector which is inserted into said inserting aperture of said upper case to contact said metal partition grooves.

25 2. A junction box for electrical communication as claimed in claim 1, wherein the side of each divided plate, which faced to said passage have

an aperture so as to locate said L-shape terminal.

3. A junction box for electrical communication as claimed in claim 1, wherein said guide wire connecting block can fix six or eight guide wires.

4. A junction box for electrical communication comprising a plurality of terminals to which a communication device may be connected, each terminal being connected by a guide wire to a terminal post at which electrical connection can be made to an incoming wire.

5. A junction box substantially as described herein with reference to Figures 1 to 9 of the drawings.

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**Patents Act 1977**  
**Examiner's report to the Comptroller under Section 17**  
**(The Search report)**

Application number  
 GB 9509581.6

**Relevant Technical Fields**

(i) UK Cl (Ed.N) H2E: EBX, EDCW, EFAK

(ii) Int Cl (Ed.6) H02G; H01R

Search Examiner  
 MRS J BANNISTER

Date of completion of Search  
 3 AUGUST 1995

**Databases (see below)**

(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii)

Documents considered relevant following a search in respect of Claims :-  
 AT LEAST CLAIMS 1, 4

**Categories of documents**

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|--|---|
| <p><b>X:</b> Document indicating lack of novelty or of inventive step.</p> <p><b>Y:</b> Document indicating lack of inventive step if combined with one or more other documents of the same category.</p> <p><b>A:</b> Document indicating technological background and/or state of the art.</p> | <p><b>P:</b> Document published on or after the declared priority date but before the filing date of the present application.</p> <p><b>E:</b> Patent document published on or after, but with priority date earlier than, the filing date of the present application.</p> <p><b>&amp;:</b> Member of the same patent family; corresponding document.</p> |
|--|---|

Category	Identity of document and relevant passages		Relevant to claim(s)
X	GB 0349497	(STC) see terminals 14, posts 8	4
X	US 5266049	(LEVITON) see jack terminals 164 Figure 2, wires in centre Figure 4, posts 188	4
X	US 4723919	(GTE) see jack housing 3, wires 26, posts 4	4

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